

<b>SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS</b> OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30				1. REQUISITION NUMBER <b>95230 32900432</b>		PAGE 1 OF <b>34</b>	
2. CONTRACT NO.		3. AWARD/EFFECTIVE DATE		4. ORDER NUMBER		5. SOLICITATION NUMBER <b>N65540-04-Q-0043</b>	
7. FOR SOLICITATION INFORMATION CALL:		a. NAME <b>DAVID DENNISON</b>		b. TELEPHONE NUMBER (No Collect Calls) <b>215-897-1494</b> <b>215-897-7059 (FAX)</b>		6. SOLICITATION ISSUE DATE <b>03-DEC-02</b> 8. OFFER DUE DATE/LOCAL TIME <b>03-DEC-24/ 0400 PM</b>	
9. ISSUED BY  CONTRACTING OFFICER NSWC CARDEROCK DIVISION 5001 S. BROAD STREET PHILADELPHIA PA 19112-1403  ATTN: DAVID DENNISON 215-897-1494				10. THIS ACQUISITION IS  <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE: 100 % FOR <input checked="" type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> SMALL DISADV. BUSINESS <input type="checkbox"/> 8(A) SIC: 3829 SIZE STANDARD: 500		11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE  13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)  13b. RATING  14. METHOD OF SOLICITATION <input checked="" type="checkbox"/> RFQ <input type="checkbox"/> IFB <input type="checkbox"/> RFP	
15. DELIVER TO RECEIVING OFFICER, FISC, NSWC CARDEROCK DIVISION 1601 LANGLEY AVENUE PHILA. PA 19112-5051 ATTN: NAVAL BUSINESS CENTER				16. ADMINISTERED BY  CODE <b>N65540</b>			
17a. CONTRACTOR/OFFEROR CODE <input type="text"/> FACILITY CODE <input type="text"/>  TELEPHONE NO. - -				18a. PAYMENT WILL BE MADE BY  CODE <input type="text"/>			
<input type="checkbox"/> 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER				18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input checked="" type="checkbox"/> SEE ADDENDUM			
19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES			21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
0001	REQN. NO. 95230 /32900432 ITEM NAME: DATA ACQUISITION AND ANALYSIS SYSTEM (DAAS) 80 CHANNEL DATA ACQUISITION SYSTEM FOR SOUND & VIBRATION ANALYSIS IN ACCORDANCE WITH THE ATTACHED  (Attach Additional Sheets as Necessary)			1	EA		
25. ACCOUNTING AND APPROPRIATION DATA						26. TOTAL AWARD AMOUNT (For Govt. Use Only)	
27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4, FAR 52.212-3, AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input checked="" type="checkbox"/> ARE NOT ATTACHED.							
27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4, FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.							
28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN <input type="checkbox"/> COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.				29. AWARD OF CONTRACT: REFERENCE OFFER DATED <input type="checkbox"/> YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: <input type="checkbox"/>			
30a. SIGNATURE OF OFFEROR/CONTRACTOR				31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)			
30b. NAME AND TITLE OF SIGNER (TYPE OR PRINT)		30c. DATE SIGNED		31b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT)		31c. DATE SIGNED	
32a. QUANTITY IN COLUMN 21 HAS BEEN <input type="checkbox"/> RECEIVED <input type="checkbox"/> INSPECTED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED				33. SHIP NUMBER <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		34. VOUCHER NUMBER	
32b. SIGNATURE OF AUTHORIZED GOVT. REPRESENTATIVE				32c. DATE		35. AMOUNT VERIFIED CORRECT FOR	
41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT				36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		37. CHECK NUMBER	
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER		41c. DATE		38. S/R ACCOUNT NUMBER		39. S/R VOUCHER NUMBER	
				42a. RECEIVED BY (Print)		40. PAID BY	
				42b. RECEIVED AT (Location)			
				42c. DATE REC'D (YY/MM/DD)		42d. TOTAL CONTAINERS	

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SECTION B SUPPLIES/SERVICES

ITEM	SUPPLIES/SERVICES SPECIFICATIONS.	QUANTITY UI	U-PRICE	AMOUNT
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This Request for Quotations covers the procurement of a Data Acquisition and Analysis System (DAAS) and Associated Technical Data. The DAAS to be furnished will be in accordance with the requirements contained in the Data Acquisition and Analysis System Specification. This RFQ is issued using Simplified Acquisition Procedures set forth in Part 13 of the Federal Acquisition Regulation (FAR) as authorized by the Test Program for Certain Commercial Items pursuant to FAR Subpart 13.5.

The Government intends to make an award to the low price technically acceptable offeror. Technical acceptability shall be determined based on an assessment of the following factors: Technical Compliance and Corporate Experience. To determine technical acceptability, offerors should be required to submit information as part of their quotation addressing each of these factors as described below. A rating of Acceptable or Unacceptable shall be assigned under each of the above factors, and on an overall basis as the result of the rating in the individual factors. In order to obtain an overall rating of Acceptable, an offeror must receive a rating of Acceptable in both Technical Compliance and Corporate Experience. Failure to submit adequate information will result in the quotation being rated as Unacceptable and from any further award consideration. The Government intends on making an award based on the initial quotations received in response to this RFQ. As a result, an offeror's initial quotation should contain its best offer from both a technical and a price standpoint.

#### TECHNICAL CAPABILITY

In this factor, offerors must provide information demonstrating that the DAAS it intends to furnish will meet the requirements contained in the Data Acquisition and Analysis System Specification. In particular, offerors must provide information that the DAAS being offered will meet the specification requirements shown below. The Government desires to procure an existing commercial DAAS with the minimum number of modifications. Therefore, offerors should identify the existing commercial DAAS it intends to supply and identify what, if any, modifications it intends to make to its existing commercial system to satisfy the specification requirements. In addition, offerors may submit product literature, brochures or catalog information on its existing commercial system that shows the proposed DAAS will satisfy the requirements listed below.

- a. The DAAS will meet the following hardware requirements:
  1. 80 input channels able to be separated to two independent systems with 40 channels each
  2. Supports direct transducer coupling for voltage and ICP sensors
  3. Supports TEDS transducers
  4. Hardware compatibility with existing/in-house data acquisition system
  5. Sample rate up to 204 kHz
  6. Simultaneous throughput to host PC disk while processing (FFT, order track, third octave)
  7. Support for conditioning and tracking of at least 4 tachometers
  8. Software controlled channel setup with hardware LED indicators
  9. Chassis configurations flexible to include 16-slots (up to 64 channels) with ability to daisy chain the chassis for larger channel count requirements. All cards to be interchangeable between chassis.

10. System will be provided with a portable controller with the same or better features as follows: Pentium-4 2.6 GHz processor, 512 MB RAM, 80 GB Hard disk Drive, 15 inch display, CD/DVD burner (DVD+RW/+R), weighing less than 10 pounds, with carrying case
  11. Must include 2 ruggedized shipping cases each able to be fit through a 26 inch diameter hatch and not exceed 3 feet in length
  12. Each shipping case will be capable of housing all hardware associated with a 40 channel system
  13. The shipping case and all hardware associated with a 40 channel system will not exceed 100 pounds
- b. The DAAS must also have the following expansion capabilities:
1. Expandable up to 960 input channels
  2. Support for direct transducer coupling, including charge, strain and microphone
- c. The DAAS will meet the following data acquisition software requirements:
1. Direct access to any ODBC database for transducer information
  2. Software and binary data compatibility with existing/in-house data acquisition system
  3. Embedded, user-specified, documentation
  4. Channels can be grouped into vibration, acoustic, static and tachometer channels
  5. Support for multiple reference channels
  6. Averaging methods include stable averaging, exponential averaging, Maximum hold and Minimum hold
  7. Following functions are provided online: Time, Spectra, FRF (H1,H2, Hv), Octave (1/1, 1/2 1/3, 1/6, 1/12, 1/24) - optionally with ANSI emulation, Cross-Power, Auto-Power, and Sound Intensity. FRF's and crosspowers are calculated between responses and all reference channels.
  8. Following functions are provided online referenced to at least two different tachometers: Octave sections (1/1, 1/2 1/3, 1/6, 1/12, 1/24), Order Sections, Frequency Sections and Critical Band sections, overall levels.
  9. The following can be calculated post-processed from at least two different tachometers: order sections, octave sections, critical band and frequency sections, weighted overall levels, maximum order contributions, peak order or peak frequency hold, integration or differentiation, average of all functions between different runs.
  10. Simultaneous throughput to host PC disk while processing (FFT, order track, real-time third octave)
  11. Vibration channels can be converted online to displacement/velocity/acceleration for spectra and autopower functions
  12. User-configurable display layouts with 2D (Front/Back, Upper/Lower, Octave, Bode), waterfall and colormap displays
  13. Single, double, harmonic, ratio and crosshair cursors
  14. Change cursor properties, annotation style, amount of decimal places
  15. Support for embedding of data in Microsoft documents (e.g. Word, Excel, Powerpoint) using Active Pictures

- d. The DAAS data acquisition software must also have the following expansion capabilities:
  - 1. Expandable up to 960 input channels Simultaneous throughput to host PC disk while processing (FFT, order track, third octave)
  - 2. Batch Reporting and Plotting
  - 3. Capability to network or float the software to other PC compatible systems
- e. The DAAS Real Time Data Processing software must have the following features/capabilities:
  - 1. Data I/O - Direct support of binary digital time history data file (TDF).
  - 2. Displays/Plotting:
    - (a) Static Display (2D-3D Functions): Front/Back, Upper/Lower, Nyquist, Octave, Waterfall, Color Map: link of time and frequency cursors/selected segments with other displays/forms through software bus.
    - (b) Geometry Display: Front/Back, Upper/Lower, Quad, Left/Right
    - (c) Strip Chart Display: Multi-channel, Overview, Detailed (zoom), Indicators (Meter, Digital, Bar) with user definable alarm levels and functions (RMS, MAX, MIN, Cursor Value,...), Auto-tailing, Segment and Cursor selections, user definable markers (point or segment). Automatic scrolling
    - (d) Powerful plot-format editor allows user definable plot formats (any type/combo of windows, drawing capabilities, text annotation, inclusion of color bitmaps/logos) interactive, automatic and batch plotting modes; automatic reduction for large time histories.

#### CORPORATE EXPERIENCE

Under this factor the offeror must furnish information demonstrating its experience with the production and/or manufacture of same or similar items. In addition, the offeror must provide information on its capabilities, resources, equipment and facilities that will be used during production and testing and information regarding the quality or inspection system that will be employed to ensure the DAAS will comply with the specification requirements.

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## SECTION F TIME OF DELIVERY

DELIVERIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS

ITEM	QUANTITY	DELIVERY REQUIRED
0001	1 EA	04-JAN-30

52.247-34 F.O.B. DESTINATION (NOV 1991)

52.212-4 CONTRACT TERMS AND CONDITIONS--COMMERCIAL ITEMS  
(OCT 2003)

(a) Inspection/Acceptance. The Contractor shall only tender for acceptance those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. The Government must exercise its post-acceptance rights--(1) Within a reasonable time after the defect was discovered or should have been discovered; and (2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(b) Assignment. The Contractor or its assignee may assign its rights to receive payment due as a result of performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency in accordance with the Assignment of Claims Act (31 U.S.C. 3727). However, when a third party makes payment (e.g., use of the Governmentwide commercial purchase card), the Contractor may not assign its rights to receive payment under this contract.

(c) Changes. Changes in the terms and conditions of this contract may be made only by written agreement of the parties.

(d) Disputes. This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613). Failure of the parties to this contract to reach agreement on any request for equitable adjustment, claim, appeal or action arising under or relating to this contract shall be a dispute to be resolved in accordance with the clause at FAR 52.233-1, Disputes, which is incorporated herein by reference. The Contractor shall proceed diligently with performance of this contract, pending final resolution of any dispute arising under the contract.

(e) Definitions. The clause at FAR 52.202-1, Definitions, is incorporated herein by reference.

(f) Excusable delays. The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence such as, acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy

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such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(g) Invoice. (1) The Contractor shall submit an original invoice and three copies (or electronic invoice, if authorized,) to the address designated in the contract to receive invoices. An invoice must include--

(i) Name and address of the Contractor;

(ii) Invoice date and number;

(iii) Contract number, contract line item number and, if applicable, the order number;

(iv) Description, quantity, unit of measure, unit price and extended price of the items delivered;

(v) Shipping number and date of shipment including the bill of lading number and weight of shipment if shipped on Government bill of lading;

(vi) Terms of any discount for prompt payment offered;

(vii) Name and address of official to whom payment is to be sent;

(viii) Name, title, and phone number of person to notify in event of defective invoice; and

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision, contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(2) Invoices will be handled in accordance with the Prompt Payment Act (31 U.S.C. 3903) and Office of Management and Budget (OMB) prompt payment regulations at 5 CFR part 1315.

(h) Patent indemnity. The Contractor shall indemnify the Government and its officers, employees and agents against liability, including costs, for actual or alleged direct or contributory infringement of, or inducement to infringe, any United States or foreign patent, trademark or copyright, arising out of the performance of this contract, provided the Contractor is reasonably notified of such claims and proceedings.

(i) Payment. (1) Items accepted. Payment shall be made for items accepted by the Government that have been delivered to the delivery destinations set forth in this contract.

(2) Prompt payment. The Government will make payment in accordance with the Prompt Payment Act (31 U.S.C. 3903) and prompt payment regulations at 5 CFR part 1315.

(3) Electronic Funds Transfer (EFT). If the Government makes payment by EFT, see 52.212-5(b) for the appropriate EFT clause.

(4) Discount. In connection with any discount offered for early payment, time shall be computed from the date of the invoice. For the purpose of computing the discount earned, payment shall be considered to have been made on the date which appears on the payment check or the specified payment

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date if an electronic funds transfer payment is made.

(5) Overpayments. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(j) Risk of loss. Unless the contract specifically provides otherwise, risk of loss or damage to the supplies provided under this contract shall remain with the Contractor until, and shall pass to the Government upon:

(1) Delivery of the supplies to a carrier, if transportation is f.o.b. origin; or

(2) Delivery of the supplies to the Government at the destination specified in the contract, if transportation is f.o.b. destination.

(k) Taxes. The contract price includes all applicable Federal, State, and local taxes and duties.

(l) Termination for the Government's convenience. The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges the Contractor can demonstrate to the satisfaction of the Government using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred which reasonably could have been avoided.

(m) Termination for cause. The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for default, such termination shall be deemed a termination for convenience.

(n) Title. Unless specified elsewhere in this contract, title to items furnished under this contract shall pass to the Government upon acceptance, regardless of when or where the Government takes physical possession.

(o) Warranty. The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

(p) Limitation of liability. Except as otherwise provided by an express warranty, the Contractor will not be liable to the Government for consequential damages resulting from any defect or deficiencies in accepted items.

(q) Other compliances. The Contractor shall comply with all applicable Federal, State and local laws, executive orders, rules and regulations applicable to its performance under this contract.

(r) Compliance with laws unique to Government contracts. The Contractor agrees to comply with 31 U.S.C. 1352 relating to



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limitations on the use of appropriated funds to influence certain Federal contracts; 18 U.S.C. 431 relating to officials not to benefit; 40 U.S.C. 327, et seq., Contract Work Hours and Safety Standards Act; 41 U.S.C. 51-58, Anti-Kickback Act of 1986; 41 U.S.C. 265 and 10 U.S.C. 2409 relating to whistleblower protections; 49 U.S.C. 40118, Fly American; and 41 U.S.C. 423 relating to procurement integrity.

(s) Order of precedence. Any inconsistencies in this solicitation or contract shall be resolved by giving precedence in the following order:

- (1) The schedule of supplies/services.
- (2) The Assignments, Disputes, Payments, Invoice, Other Compliances, and Compliance with Laws Unique to Government Contracts paragraphs of this clause.
- (3) The clause at 52.212-5.
- (4) Addenda to this solicitation or contract, including any license agreements for computer software.
- (5) Solicitation provisions if this is a solicitation.
- (6) Other paragraphs of this clause.
- (7) The Standard Form 1449.
- (8) Other documents, exhibits, and attachments.
- (9) The specification.

(t) Central Contractor Registration (CCR). (1) Unless exempted by an addendum to this contract, the Contractor is responsible during performance and through final payment of any contract for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(2)(i) If a Contractor has legally changed its business name, "doing business as" name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in FAR subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of its intention to (A) change the name in the CCR database; (B) comply with the requirements of subpart 42.12; and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor must provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph (t)(2)(i) of this clause, or fails to perform the agreement at paragraph (t)(2)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the electronic funds transfer (EFT) clause of this contract.

(3) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see Subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including

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those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the "Suspension of payment" paragraph of the EFT clause of this contract.

(4) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at <http://www.ccr.gov> or by calling 1-888-227-2423 or 269-961-5757.

52.212-5 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT  
STATUTES OR EXECUTIVE ORDERS--COMMERCIAL ITEMS (OCT 2003)

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clause, which is incorporated in this contract by reference, to implement provisions of law or Executive orders applicable to acquisitions of commercial items: 52.233-3, Protest after Award (AUG 1996) (31 U.S.C. 3553).

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items: [Contracting Officer check as appropriate.]

- \_\_\_ (1) 52.203-6, Restrictions on Subcontractor Sales to the Government (JUL 1995), with Alternate I (OCT 1995) (41 U.S.C. 253g and 10 U.S.C. 2402).
- \_\_\_ (2) 52.219-3, Notice of Total HUBZone Set-Aside (JAN 1999) (15 U.S.C. 657a).
- \_\_\_ (3) 52.219-4, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JAN 1999) (if the offeror elects to waive the preference, it shall so indicate in its offer) (15 U.S.C. 657a).
- \_\_\_ (4) (i) 52.219-5, Very Small Business Set-Aside (JUNE 2003) (Pub. L. 103-403, section 304, Small Business Reauthorization and Amendments Act of 1994).  
 \_\_\_ (ii) Alternate I (MAR 1999) of 52.219-5.  
 \_\_\_ (iii) Alternate II (JUNE 2003) of 52.219-5.
- \_\_\_ (5) (i) 52.219-6, Notice of Total Small Business Set-Aside (JUNE 2003) (15 U.S.C. 644).  
 \_\_\_ (ii) Alternate I (OCT 1995) of 52.219-6.
- \_\_\_ (6) (i) 52.219-7, Notice of Partial Small Business Set-Aside (JUNE 2003) (15 U.S.C. 644).  
 \_\_\_ (ii) Alternate I (OCT 1995) of 52.219-7.
- \_\_\_ (7) 52.219-8, Utilization of Small Business Concerns (OCT 2000) (15 U.S.C. 637 (d) (2) and (3)).
- \_\_\_ (8) (i) 52.219-9, Small Business Subcontracting Plan (JAN 2002) (15 U.S.C. 637(d)(4)).  
 \_\_\_ (ii) Alternate I (OCT 2001) of 52.219-9.  
 \_\_\_ (iii) Alternate II (OCT 2001) of 52.219-9.
- \_\_\_ (9) 52.219-14, Limitations on Subcontracting (DEC 1996) (15 U.S.C. 637(a)(14)).
- \_\_\_ (10) (i) 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns (JUNE 2003) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323) (if the offeror elects to waive the adjustment, it shall so indicate in its offer).  
 \_\_\_ (ii) Alternate I (JUNE 2003) of 52.219-23.
- \_\_\_ (11) 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting (OCT 1999) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).
- \_\_\_ (12) 52.219-26, Small Disadvantaged Business Participation Program--Incentive Subcontracting (OCT 2000) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).
- \_\_\_ (13) 52.222-3, Convict Labor (JUNE 2003) (E.O. 11755).
- \_\_\_ (14) 52.222-19, Child Labor--Cooperation with Authorities

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- and Remedies (SEP 2002) (E.O. 13126).
- (15) 52.222-21, Prohibition of Segregated Facilities (FEB 1999).
- (16) 52.222-26, Equal Opportunity (APR 2002) (E.O. 11246).
- (17) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212).
- (18) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).
- (19) 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212).
- (20) (i) 52.223-9, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (AUG 2000) (42 U.S.C. 6962(c)(3)(A)(ii)).  
(ii) Alternate I (AUG 2000) of 52.223-9 (42 U.S.C. 6962(i)(2)(C)).
- (21) 52.225-1, Buy American Act--Supplies (JUNE 2003) (41 U.S.C. 10a-10d).
- (22) (i) 52.225-3, Buy American Act--North American Free Trade Agreement--Israeli Trade Act (JUNE 2003) (41 U.S.C. 10a-10d, 19 U.S.C. 3301 note, 19 U.S.C. 2112 note).  
(ii) Alternate I (MAY 2002) of 52.225-3.  
(iii) Alternate II (MAY 2002) of 52.225-3.
- (23) 52.225-5, Trade Agreements (OCT 2003) (19 U.S.C. 2501, et seq., 19 U.S.C. 3301 note).
- (24) 52.225-13, Restrictions on Certain Foreign Purchases (OCT 2003) (E.o.s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).
- (25) 52.225-15, Sanctioned European Union Country End Products (FEB 2000) (E.O. 12849).
- (26) 52.225-16, Sanctioned European Union Country Services (FEB 2000) (E.O. 12849).
- (27) 52.232-29, Terms for Financing of Purchases of Commercial Items (FEB 2002) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).
- (28) 52.232-30, Installment Payments for Commercial Items (OCT 1995) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).
- (29) 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration (OCT 2003) (31 U.S.C. 3332).
- (30) 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration (MAY 1999) (31 U.S.C. 3332).
- (31) 52.232-36, Payment by Third Party (MAY 1999) (31 U.S.C. 3332).
- (32) 52.239-1, Privacy or Security Safeguards (AUG 1996) (5 U.S.C. 552a).
- (33) (i) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (APR 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631).  
(ii) Alternate I (APR 1984) of 52.247-64.
- (c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:  
[Contracting Officer check as appropriate.]
- (1) 52.222-41, Service Contract Act of 1965, as Amended (MAY 1989) (41 U.S.C. 351, et seq.).
- (2) 52.222-42, Statement of Equivalent Rates for Federal

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- Hires (MAY 1989) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).
- (3) 52.222-43, Fair Labor Standards Act and Service Contract Act--Price Adjustment (Multiple Year and Option Contracts) (MAY 1989) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).
  - (4) 52.222-44, Fair Labor Standards Act and Service Contract Act--Price Adjustment (February 2002) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).
  - (5) 52.222-47, SCA Minimum Wages and Fringe Benefits Applicable to Successor Contract Pursuant to PreDecemberessor Contractor Collective Bargaining Agreements (CBA) (May 1989) (41 U.S.C. 351, et seq.).
- (d) Comptroller General Examination of Record. The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at 52.215-2, Audit and Records--Negotiation.
- (1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.
- (2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR Subpart 4.7, Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.
- (3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.
- (e)(1) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c), and (d) of this clause, the Contractor is not required to flow down any FAR clause, other than those in paragraphs (i) through (vi) of this paragraph in a subcontract for commercial items. Unless otherwise indicated below, the extent of the flow down shall be as required by the clause--
- (i) 52.219-8, Utilization of Small Business Concerns (October 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.
  - (ii) 52.222-26, Equal Opportunity (April 2002) (E.O. 11246).
  - (iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (December 2001) (38 U.S.C. 4212).
  - (iv) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793).
  - (v) 52.222-41, Service Contract Act of 1965, as Amended (May

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1989), flow down required for all subcontracts subject to the Service Contract Act of 1965 (41 U.S.C. 351, et seq.).

(vi) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (April 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631). Flow down required in accordance with paragraph (d) of FAR clause 52.247-64.

(2) While not required, the contractor May include in its subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

252.212-7001 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS APPLICABLE TO DEFENSE ACQUISITIONS OF COMMERCIAL ITEMS (OCT 2003)

(a) The contractor agrees to comply with the following Federal Acquisition Regulation (FAR) clause which, if checked, is included in this contract by reference to implement a provision of law applicable to acquisitions of commercial items or components.

\_\_\_ 52.203-3 Gratuities (APR 1984) (10 U.S.C. 2207)

(b) The Contractor agrees to comply with any clause that is checked on the following list of Defense FAR Supplement clauses which, if checked, is included in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items or components.

- \_\_\_ 252.205-7000 Provision of Information to Cooperative Agreement Holders (DEC 1991) (10 U.S.C. 2416).
- \_\_\_ 252.219-7003 Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (DoD Contracts) (APR 1996) (15 U.S.C. 637).
- \_\_\_ 252.219-7004 Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (Test Program) (JUN 1997) (15 U.S.C. 637 Note).
- \_\_\_ 252.225-7001 Buy American Act and Balance of Payments Program (APR 2003) (41 U.S.C. 10a-10d, E.O. 10582).
- \_\_\_ 252.225-7012 Preference for Certain Domestic Commodities (FEB 2003) (10 U.S.C. 2533a).
- \_\_\_ 252.225-7014 Preference for Domestic Specialty Metals (APR 2003) (10 U.S.C. 2533a).
- \_\_\_ 252.225-7015 Restriction on Acquisition of Hand or Measuring Tools (APR 2003) (10 U.S.C. 2533a).
- \_\_\_ 252.225-7016 Restriction on Acquisition of Ball and Roller Bearings (APR 2003) (\_\_\_ Alternate I) (APR 2003) (10 U.S.C. 2534 and Section 8099 of Pub. L. 104-61) and similar sections in subsequent DoD appropriations acts).
- \_\_\_ 252.225-7021 Trade Agreements (AUG 2003) (19 U.S.C. 2501-2518 and 19 U.S.C. 3301 note).
- \_\_\_ 252.225-7027 Restriction on Contingent Fees for Foreign Military Sales (APR 2003) (22 U.S.C. 2779).
- \_\_\_ 252.225-7028 Exclusionary Policies and Practices of Foreign Governments (APR 2003) (22 U.S.C. 2755).
- \_\_\_ 252.225-7036 Buy American Act--North American Free Trade Agreement Implementation Act--Balance of Payments Program (APR 2003) (\_\_\_ Alternate I) (APR 2003) (41 U.S.C. 10a-10d and 19 U.S.C. 3301 note).
- \_\_\_ 252.225-7038 Restriction on Acquisition of Air Circuit Breakers (APR 2003) (10 U.S.C. 2534(a)(3)).
- \_\_\_ 252.226-7001 Utilization of Indian Organizations, Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns (OCT 2003) (Section 8021 of Pub. L. 107-248).

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- 252.227-7015 Technical Data--Commercial Items (NOV 1995)  
(10 U.S.C. 2320).
  - 252.227-7037 Validation of Restrictive Markings on  
Technical Data (SEP 1999) (10 U.S.C. 2321).
  - 252.232-7003 Electronic Submission of Payment Requests  
(MAR 2003) (10 U.S.C. 2227)
  - 252.243-7002 Requests for Equitable Adjustment (MAR 1998)  
(10 U.S.C. 2410).
  - 252.247-7023 Transportation of Supplies by Sea (MAY 2002)  
(Alternate I) (MAR 2000) (Alternate II) (MAR 2000)  
(Alternate III) (MAY 2002) (10 U.S.C. 2631).
  - 252.247-7024 Notification of Transportation of Supplies  
by Sea (MAR 2000) (10 U.S.C. 2631).
- (c) In addition to the clauses listed in paragraph (e) of the Contract Terms and Conditions Required to Implement Statutes or Executive Orders--Commercial Items clause of this contract (FAR 52.212-5), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:
- 252.225-7014 Preference for Domestic Specialty Metals,  
Alternate I (APR 2003) (10 U.S.C. 2533a).
  - 252.247-7023 Transportation of Supplies by Sea (MAY 2002)  
(10 U.S.C. 2631)
  - 252.247-7024 Notification of Transportation of Supplies  
by Sea (MAR 2000) (10 U.S.C. 2631).

52.212-1 INSTRUCTIONS TO OFFERORS--COMMERCIAL ITEMS (OCT 2003)

- (a) North American Industry Classification System (NAICS) code and small business size standard. The NAICS code and small business size standard for this acquisition appear in Block 10 of the solicitation cover sheet (SF 1449). However, the small business size standard for a concern which submits an offer in its own name, but which proposes to furnish an item which it did not itself manufacture, is 500 employees.
- (b) Submission of offers. Submit signed and dated offers to the office specified in this solicitation at or before the exact time specified in this solicitation. Offers may be submitted on the SF 1449, letterhead stationery, or as otherwise specified in the solicitation. As a minimum, offers must show--
- (1) The solicitation number;
  - (2) The time specified in the solicitation for receipt of offers;
  - (3) The name, address, and telephone number of the offeror;
  - (4) A technical description of the items being offered in sufficient detail to evaluate compliance with the requirements in the solicitation. This may include product literature, or other documents, if necessary;
  - (5) Terms of any express warranty;
  - (6) Price and any discount terms;
  - (7) "Remit to" address, if different than mailing address;
  - (8) A completed copy of the representations and certifications at FAR 52.212-3;
  - (9) Acknowledgment of Solicitation Amendments;
  - (10) Past performance information, when included as an evaluation factor, to include recent and relevant contracts for the same or similar items and other references (including contract numbers, points of contact with telephone numbers and

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other relevant information); and

(11) If the offer is not submitted on the SF 1449, include a statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation. Offers that fail to furnish required representations or information, or reject the terms and conditions of the solicitation may be excluded from consideration.

(c) Period for acceptance of offers. The offeror agrees to hold the prices in its offer firm for 30 calendar days from the date specified for receipt of offers, unless another time period is specified in an addendum to the solicitation.

(d) Product samples. When required by the solicitation, product samples shall be submitted at or prior to the time specified for receipt of offers. Unless otherwise specified in this solicitation, these samples shall be submitted at no expense to the Government, and returned at the sender's request and expense, unless they are destroyed during preaward testing.

(e) Multiple offers. Offerors are encouraged to submit multiple offers presenting alternative terms and conditions or commercial items for satisfying the requirements of this solicitation. Each offer submitted will be evaluated separately.

(f) Late submissions, modifications, revisions, and withdrawals of offers. (1) Offerors are responsible for submitting offers, and any modifications, revisions, or withdrawals, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that offers or revisions are due.

(2)(i) Any offer, modification, revision, or withdrawal of an offer received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(A) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of offers; or

(B) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(C) If this solicitation is a request for proposals, it was the only proposal received.

(ii) However, a late modification of an otherwise successful offer, that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(3) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the offer wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(4) If an emergency or unanticipated event interrupts normal Government processes so that offers cannot be received at the Government office designated for receipt of offers by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation

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or other notice of an extension of the closing date, the time specified for receipt of offers will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(5) Offers may be withdrawn by written notice received at any time before the exact time set for receipt of offers. Oral offers in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile offers, offers may be withdrawn via facsimile received at any time before the exact time set for receipt of offers, subject to the conditions specified in the solicitation concerning facsimile offers. An offer may be withdrawn in person by an offeror or its authorized representative if, before the exact time set for receipt of offers, the identity of the person requesting withdrawal is established and the person signs a receipt for the offer.

(g) Contract award (not applicable to Invitation for Bids). The Government intends to evaluate offers and award a contract without discussions with offerors. Therefore, the offeror's initial offer should contain the offeror's best terms from a price and technical standpoint. However, the Government reserves the right to conduct discussions if later determined by the Contracting Officer to be necessary. The Government may reject any or all offers if such action is in the public interest; accept other than the lowest offer; and waive informalities and minor irregularities in offers received.

(h) Multiple awards. The Government may accept any item or group of items of an offer, unless the offeror qualifies the offer by specific limitations. Unless otherwise provided in the Schedule, offers may not be submitted for quantities less than those specified. The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit prices offered, unless the offeror specifies otherwise in the offer.

(i) Availability of requirements documents cited in the solicitation. (1)(i) The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29, and copies of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained for a fee by submitting a request to--

GSA Federal Supply Service Specifications Section  
Suite 8100  
470 East L'Enfant Plaza, SW  
Washington, DC 20407

Telephone (202) 619-8925  
Facsimile (202) 619-8978.

(ii) If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained free of charge by submitting a request to the addressee in paragraph (i)(1)(i) of this provision. Additional copies will be issued for a fee.

(2) The DoD Index of Specifications and Standards (DoDISS) and documents listed in it may be obtained from the--

Department of Defense Single Stock Point (DoDSSP)  
Building 4, Section D  
700 Robbins Avenue  
Philadelphia, PA 19111-5094



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Telephone (215) 697-2667/2179  
Facsimile (215) 697-1462.

(i) Automatic distribution may be obtained on a subscription basis.

(ii) Order forms, pricing information, and customer support information may be obtained--

(A) By telephone at (215) 697-2667/2179; or

(B) Through the DoDSSP Internet site at <http://dodssp.daps.mil>.

(3) Nongovernment (voluntary) standards must be obtained from the organization responsible for their preparation, publication, or maintenance.

(j) Data Universal Numbering System (DUNS) Number. (Applies to all offers exceeding \$25,000, and offers of \$25,000 or less if the solicitation requires the Contractor to be registered in the Central Contractor Registration (CCR) database. The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS +4" followed by the DUNS or DUNS +4 number that identifies the offeror's name and address. The DUNS +4 is the DUNS number plus a 4-character suffix that may be assigned at the discretion of the offeror to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see FAR Subpart 32.11) for the same parent concern. If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. An offeror within the United States may contact Dun and Bradstreet by calling 1-866-705-5711 or via the internet at <http://www.dnb.com>. An offeror located outside the United States must contact the local Dun and Bradstreet office for a DUNS number.

(k) Central Contractor Registration. Unless exempted by an addendum to this solicitation, by submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance and through final payment of any contract resulting from this solicitation. If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror. Offerors may obtain information on registration and annual confirmation requirements via the Internet at <http://www.ccr.gov> or by calling 1-888-227-2423 or 269-961-5757.

52.212-3 OFFEROR REPRESENTATIONS AND CERTIFICATIONS-COMMERCIAL ITEMS (JUN 2003)--ALTERNATE I (APR 2002)

(a) Definitions. As used in this provision:

"Emerging small business" means a small business concern whose size is no greater than 50 percent of the numerical size standard for the NAICS code designated.

"Forced or indentured child labor" means all work or service--

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to a contract the enforcement of which can be accomplished by process or penalties.

"Service-disabled veteran-owned small business concern"--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or

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more service--disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and size standards in this solicitation.

"Veteran-owned small business concern" means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern--

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

"Women-owned business concern" means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Taxpayer Identification Number (TIN) (26 U.S.C. 6109, 31 U.S.C. 7701). (Not applicable if the offeror is required to provide this information to a central contractor registration database to be eligible for award.)

(1) All offerors must submit the information required in paragraphs (b)(3) through (b)(5) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the Internal Revenue Service (IRS).

(2) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(3) Taxpayer Identification Number (TIN).

☐ TIN: \_\_\_\_\_.

☐ TIN has been applied for.

☐ TIN is not required because:

☐ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business

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in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

☐ Offeror is an agency or instrumentality of a foreign government;

☐ Offeror is an agency or instrumentality of the Federal Government.

(4) Type of organization.

- ☐ Sole proprietorship;
- ☐ Partnership;
- ☐ Corporate entity (not tax-exempt);
- ☐ Corporate entity (tax-exempt);
- ☐ Government entity (Federal, State, or local);
- ☐ Foreign government;
- ☐ International organization per 26 CFR 1.6049-4;
- ☐ Other \_\_\_\_\_.

(5) Common parent.

- ☐ Offeror is not owned or controlled by a common parent;
- ☐ Name and TIN of common parent:  
Name \_\_\_\_\_  
TIN \_\_\_\_\_.

(c) Offerors must complete the following representations when the resulting contract will be performed in the United States or its outlying areas. Check all that apply.

(1) Small business concern. The offeror represents as part of its offer that it ☐ is, ☐ is not a small business concern.

(2) Veteran-owned small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents as part of its offer that it ☐ is, ☐ is not a veteran-owned small business concern.

(3) Service-disabled veteran-owned small business concern. [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(2) of this provision.] The offeror represents as part of its offer that it ☐ is, ☐ is not a service-disabled veteran-owned small business concern.

(4) Small disadvantaged business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, for general statistical purposes, that it ☐ is, ☐ is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(5) Women-owned small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it ☐ is, ☐ is not a women-owned small business concern. Note: Complete paragraphs (c)(6) and (c)(7) only if this solicitation is expected to exceed the simplified acquisition threshold.

(6) Women-owned business concern (other than small business concern). [Complete only if the offeror is a women-owned business concern and did not represent itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it ☐ is a women-owned business concern.

(7) Tie bid priority for labor surplus area concerns. If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of the contract price:

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(8) Small Business Size for the Small Business Competitiveness Demonstration Program and for the Targeted

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Industry Categories under the Small Business Competitiveness Demonstration Program. [Complete only if the offeror has represented itself to be a small business concern under the size standards for this solicitation.]

(i) (Complete only for solicitations indicated in an addendum as being set-aside for emerging small businesses in one of the four designated industry groups (DIGs).) The offeror represents as part of its offer that it ☐ is, ☐ is not an emerging small business.

(ii) (Complete only for solicitations indicated in an addendum as being for one of the targeted industry categories (TICs) or four designated industry groups (DIGs).) Offeror represents as follows:

(A) Offeror's number of employees for the past 12 months (check the Employees column if size standard stated in the solicitation is expressed in terms of number of employees); or

(B) Offeror's average annual gross revenue for the last 3 fiscal years (check the Average Annual Gross Number of Revenues column if size standard stated in the solicitation is expressed in terms of annual receipts).

(Check one of the following):

Number of Employees	Average Annual Gross Revenues
<input type="checkbox"/> 50 or fewer	<input type="checkbox"/> \$1 million or less
<input type="checkbox"/> 51--100	<input type="checkbox"/> \$1,000,001--\$2 million
<input type="checkbox"/> 101--250	<input type="checkbox"/> \$2,000,001--\$3.5 million
<input type="checkbox"/> 251--500	<input type="checkbox"/> \$3,500,001--\$5 million
<input type="checkbox"/> 501--750	<input type="checkbox"/> \$5,000,001--\$10 million
<input type="checkbox"/> 751--1,000	<input type="checkbox"/> \$10,000,001--\$17 million
<input type="checkbox"/> Over 1,000	<input type="checkbox"/> Over \$17 million

(9) (Complete only if the solicitation contains the clause at FAR 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns, or FAR 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting, and the offeror desires a benefit based on its disadvantaged status.)

(i) General. The offeror represents that either--

(A) It ☐ is, ☐ is not certified by the Small Business Administration as a small disadvantaged business concern and identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net), and that no material change in disadvantaged ownership and control has occurred since its certification, and, where the concern is owned by one or more individuals claiming disadvantaged status, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); or

(B) It ☐ has, ☐ has not submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(ii) ☐ Joint Ventures under the Price Evaluation Adjustment for Small Disadvantaged Business Concerns. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements in 13 CFR 124.

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1002(f) and that the representation in paragraph (c)(9)(i) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture:\_\_\_\_\_.]

(10) HUBZone small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It [ ] is, [ ] is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It [ ] is, [ ] is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (c)(10)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:\_\_\_\_\_.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(11) (Complete if the offeror has represented itself as disadvantaged in paragraph (c)(4) or (c)(9) of this provision.) The offeror shall check the category in which its ownership falls:

\_\_\_\_ Black American.  
 \_\_\_\_ Hispanic American.  
 \_\_\_\_ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

\_\_\_\_ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory or the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

\_\_\_\_ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

\_\_\_\_ Individual/concern, other than one of the preceding.

(11) HUBZone small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents as part of its offer that--

(i) It [ ] is, [ ] is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns Maintained by the Small Business Administration, and no material change in ownership and control, principal place of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It [ ] is, [ ] is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (c)(11)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating on the joint venture. [The offeror shall enter the name

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(i) The offeror certifies that each end product, except those listed in paragraph (g)(1)(ii) or (g)(1)(iii) of this provision, is a domestic end product and that the offeror has considered

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components of unknown origin to have been mined, produced, or manufactured outside the United States. The terms "component," "domestic end product," "end product," "foreign end product," and "United States" are defined in the clause of this solicitation entitled "Buy American Act--North American Free Trade Agreement--Israeli Trade Act."

(ii) The offeror certifies that the following supplies are NAFTA country end products or Israeli end products as defined in the clause of this solicitation entitled "Buy American Act--North American Free Trade Agreement--Israeli Trade Act":

NAFTA Country or Israeli End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(iii) The offeror shall list those supplies that are foreign end products (other than those listed in paragraph (g)(1)(ii) of this provision) as defined in the clause of this solicitation entitled "Buy American Act--North American Free Trade Agreement--Israeli Trade Act." The offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products.

Other Foreign End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(iv) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(2) Buy American Act--North American Free Trade Agreements--Israeli Trade Act Certificate, Alternate I (May 2002). If Alternate I to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products as defined in the clause of this solicitation entitled "Buy American Act--North American Free Trade Agreement--Israeli Trade Act":

Canadian End Products:

Line Item No.
_____
_____
_____

(List as necessary)

(3) Buy American Act--North American Free Trade Agreements--Israeli Trade Act Certificate, Alternate II (May 2002). If Alternate II to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products or Israeli end products as defined in the clause of this solicitation entitled "Buy American Act--

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North American Free Trade Agreement--Israeli Trade Act":

Canadian or Israeli End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(4) Trade Agreements Certificate. (Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(4)(ii) of this provision, is a U.S.-made, designated country, Caribbean Basin country, or NAFTA country end product, as defined in the clause of this solicitation entitled "Trade Agreements."

(ii) The offeror shall list as other end products those end products that are not U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products.

Other End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(iii) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items subject to the Trade Agreements Act, the Government will evaluate offers of U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products without regard to the restrictions of the Buy American Act. The Government will consider for award only offers of U.S.-made, designated country, Caribbean Basin country, or NAFTA country end products unless the Contracting Officer determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

(h) Certification Regarding Debarment, Suspension or Ineligibility for Award (Executive Order 12549). (Applies only if the contract value is expected to exceed the simplified acquisition threshold.) The offeror certifies, to the best of its knowledge and belief, that the offeror and/or any of its principals--

(1) ☐ Are, ☐ are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(2) ☐ Have, ☐ have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(3) ☐ Are, ☐ are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

(i) Certification Regarding Knowledge of Child Labor for



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VENDOR:

Listed End Products (Executive Order 13126). [The Contracting Officer must list in paragraph (i)(1) any end products being acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at 22.1503(b).]

(1) Listed end products.

Listed End Product

---

Listed Countries of Origin

---

(2) Certification. [If the Contracting Officer has identified end products and countries of origin in paragraph (i)(1) of this provision, then the offeror must certify to either (i)(2)(i) or (i)(2)(ii) by checking the appropriate block.]

[ ] (i) The offeror will not supply any end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product.

[ ] (ii) The offeror may supply an end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture any such end product furnished under this contract. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(End of provision)

Your quotation must include the following information:

Price list number and date

or

Cost breakdown by direct labor (list categories, hours and pay rates). In addition to the direct rates, provide the applicable indirect information (G&A), overhead, facilities capital cost of money (FCCM) and profit.

or

Applicable General Services Administration (GSA) contract number.

If unable to quote FOB, Destination, please complete the following:

FOB Point \_\_\_\_\_

Estimated Shipping Charge \_\_\_\_\_

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VENDOR:

Business size:

Large \_\_\_\_\_ Small \_\_\_\_\_ Nonprofit \_\_\_\_\_

Cage Code \_\_\_\_\_

Tax Identification Number (TIN) \_\_\_\_\_

DUNNS \_\_\_\_\_

ELIGIBILITY REQUIREMENTS

All contractors and individuals doing business with the Federal Government must be registered at the Contractor Central Registration Database located at:  
<http://ccr.dlsc.dla.mil/>.

ELECTRONIC DISTRIBUTION OF CONTRACT DOCUMENTS

All contract award and contract modification documents will be distributed electronically using the Navy Air Force Interface (NAFI) system. The contractor's copy will be provided in portable document format (pdf) as an attachment to an e-mail that will be sent to the contractor by the NAFI system. A pdf file may be accessed using Adobe Acrobat Reader software. This is a free software that may be downloaded at:  
<http://www.adobe.com/products/acrobat/readstep.html>

Provide the following information that will be used to make electronic distribution for any resultant contract:

Name of Point of Contact to Receive  
Distribution \_\_\_\_\_

Phone Number for Point of Contact \_\_\_\_\_

E-Mail Address for Receipt of Distribution \_\_\_\_\_

USE OF THE GOVERNMENTWIDE COMMERCIAL PURCHASE CARD

Will you accept the Governmentwide Commercial Purchase Card as a method of purchasing supplies and/or services.

\_\_\_\_\_ Yes \_\_\_\_\_ No

Will you accept the Governmentwide Commercial Purchase Card as a method of payment for your invoice.

\_\_\_\_\_ Yes \_\_\_\_\_ No

DUTY FREE ENTRY

Will any materials being shipped to the Government require a duty-free entry certificate for foreign supplies.

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VENDOR:

☐ Yes

☐ No

If yes, please include dollar amount \$ \_\_\_\_\_

## Data Acquisition and Analysis System Technical Specification

**1. Scope:** The Data Acquisition and Analysis System (DAAS) to be furnished will be used as a comprehensive data acquisition, processing and analysis suite that will enable testing and development of diagnostic and prognostic instrumentation, sensor and sensor technologies, and software/algorithms.

The system will interface with existing Microdot/BNC sensor cabling, and sensors, including ICP/voltage mode accelerometers, and will be utilized in conjunction with a test cell. The test cell will consist of a machinery fault simulator with the capability for insertion of various faults and fault severities, and testing of a variety of machinery component types (pumps, fans, gearboxes, belt drives, centrifugal/reciprocation machinery). The DAAS will also be modular, portable, and versatile for use on various rotating machinery on land-based test sites, surface ships, and submarines.

### 2. DAAS Hardware Requirements:

- a. The DAAS will meet the following hardware requirements:
  1. 80 input channels able to be separated to two independent systems with 40 channels each
  2. Supports direct transducer coupling for voltage and ICP sensors
  3. Supports TEDS transducers
  4. Hardware compatibility with existing/in-house data acquisition system
  5. Sample rate up to 204 kHz
  6. Simultaneous throughput to host PC disk while processing (FFT, order track, third octave)
  7. Support for conditioning and tracking of at least 4 tachometers
  8. Software controlled channel setup with hardware LED indicators
  9. Chassis configurations flexible to include 16-slots (up to 64 channels) with ability to daisy chain the chassis for larger channel count requirements. All cards to be interchangeable between chassis
  10. System will be provided with a portable controller with the same or better features as follows: Pentium-4 2.6 GHz processor, 512 MB RAM, 80 GB Hard disk Drive, 15 inch display, CD/DVD burner (DVD+RW/+R), weighing less than 10 pounds, with carrying case
  11. Must include 2 ruggedized shipping cases each able to be fit through a 26 inch diameter hatch and not exceed 3 feet in length
  12. Each shipping case will be capable of housing all hardware associated with a 40 channel system
  13. The shipping case and all hardware associated with a 40 channel system will not exceed 100 pounds
- b. The DAAS must also have the following expansion capabilities:
  1. Expandable up to 960 input channels
  2. Support for direct transducer coupling, including charge, strain and microphone
  3. Simultaneous throughput to host PC disk while processing (real-time third octave)

## Data Acquisition and Analysis System Technical Specification

### 3. DAAS Software Requirements:

- a. The DAAS will meet the following data acquisition software requirements:
  1. Direct access to any ODBC database for transducer information
  2. Software and binary data compatibility with existing/in-house data acquisition system
  3. Embedded, user-specified, documentation
  4. Channels can be grouped into vibration, acoustic, static and tachometer channels
  5. Support for multiple reference channels
  6. Averaging methods include stable averaging, exponential averaging, Maximum hold and Minimum hold
  7. Following functions are provided online: Time, Spectra, FRF (H1,H2, Hv), Octave (1/1, 1/2 1/3, 1/6, 1/12, 1/24) - optionally with ANSI emulation, Cross-Power, Auto-Power, and Sound Intensity. FRF's and crosspowers are calculated between responses and all reference channels.
  8. Following functions are provided online referenced to at least two different tachometers: Octave sections (1/1, 1/2 1/3, 1/6, 1/12, 1/24), Order Sections, Frequency Sections and Critical Band sections, overall levels.
  9. The following can be calculated post-processed from at least two different tachometers: order sections, octave sections, critical band and frequency sections, weighted overall levels, maximum order contributions, peak order or peak frequency hold, integration or differentiation, average of all functions between different runs.
  10. Simultaneous throughput to host PC disk while processing (FFT, order track, real-time third octave)
  11. Vibration channels can be converted online to displacement/velocity/acceleration for spectra and autopower functions
  12. User-configurable display layouts with 2D (Front/Back, Upper/Lower, Octave, Bode), waterfall and colormap displays
  13. Single, double, harmonic, ratio and crosshair cursors
  14. Change cursor properties, annotation style, amount of decimal places
  15. Support for embedding of data in Microsoft documents (e.g. Word, Excel, Powerpoint) using Active Pictures
- b. The DAAS data acquisition software must also have the following expansion capabilities:
  1. Expandable up to 960 input channels Simultaneous throughput to host PC disk while processing (FFT, order track, third octave)
  2. Batch Reporting and Plotting
  3. Capability to network or float the software to other PC compatible systems
- c. The DAAS Real Time Data Processing software must have the following features/capabilities:

## Data Acquisition and Analysis System Technical Specification

1. Data I/O - Direct support of binary digital time history data file (TDF).
2. Displays/Plotting:
  - (a) Static Display (2D-3D Functions): Front/Back, Upper/Lower, Nyquist, Octave, Waterfall, Color Map: link of time and frequency cursors/selected segments with other displays/forms through software bus.
  - (b) Geometry Display: Front/Back, Upper/Lower, Quad, Left/Right
  - (c) Strip Chart Display: Multi-channel, Overview, Detailed (zoom), Indicators (Meter, Digital, Bar) with user definable alarm levels and functions (RMS, MAX, MIN, Cursor Value,...), Auto-tailing, Segment and Cursor selections, user definable markers (point or segment). Automatic scrolling
  - (d) Powerful plot-format editor allows user definable plot formats (any type/combination of windows, drawing capabilities, text annotation, inclusion of color bitmaps/logos) interactive, automatic and batch plotting modes; automatic reduction for large time histories.
3. User Attributes/Markers:
  - (a) All time history data can be complemented with (any number of) user definable attributes of following types: float, integer, string, ordinate (start, increment, rate), variable length (eg. extra data dump).
  - (b) User attributes are stored with data in the same file: can be consulted at any moment.
  - (c) User Attributes can be defined on the level of the TDF (multiple channels) or the recording (one channel).
  - (d) Markers: point or segment markers can be graphically set for identifying specific events/segments. Markers view: 6 color, 3 line styles, 3 thickness.
  - (e) Markers editing: cut, copy, paste, move, duplicate, modify, add, key code, description.
4. Editing:
  - (a) Icon driven graphical editing, single- or multi-channel
  - (b) Editing operations: undo, cut, copy, truncate, duplicate, insert at cursor, overwrite at cursor, replace segment, modify segment (offset, mean, scale, rms, replace by constant, replace by curve), mute, straighten
  - (c) Fading: none, linear, 1/2 cosine, power, mute for user definable duration.
5. Trace Manipulation:
  - (a) Align, Multiplex and De-multiplex, Mix, Revert, Compose
  - (b) Interpolate: spline, polynomial, sinc
  - (c) Digital re-sampling: up/down, any new frequency or ratio, configurable anti-alias filtering
  - (d) Trend removal
  - (e) Curve fitting

## Data Acquisition and Analysis System Technical Specification

- (f) Moving and Exponential Average
- 6. Trace Analysis:
  - (a) Conversion of pulse-train(s) to rpm or angle trace with user definable: # pulses, transmission, cross-level, upper/lower tolerances, hold-off %, up-sampling and equidistant interpolation
  - (b) Envelope analysis based on Hilbert transform
  - (c) Sine Analyzer: amplitude, phase, frequency and sampling speed
  - (d) Sine Calibration: dB/Lin, multi-channel
  - (e) Quick single value statistics: min (x,y,index), max (x,y,index), mean, rms
  - (f) Histogram: standard, cumulative, probability, density, normalization
- 7. Trace Mathematics:
  - (a) Any mathematical expression (+, -, \*, ÷) between traces and/or scalars, all provided in a trace calculator.
  - (b) Integration: time domain (trapezium, Simpson, four point & Bode), frequency domain.
  - (c) Differentiation: time & frequency domain.
- 8. Trace Generation:
  - (a) Signal generator: sine, sweep, saw-tooth, square, random noise, controlled oscillator (with user definable carrier frequency and amplitude; fixed and variable frequency and phase deviations)
- 9. Audio Feedback:
  - (a) All time history data can be played back through the multi-media outputs of the HP9000 workstation or Windows NT PC (16 bit, CD quality)
  - (b) Replay of segment or starting at cursor through internal speaker or external headphones/speaker system.
- 10. Frame Statistics:
  - (a) Statistic evaluation on multi-channel time histories: frame length in samples or seconds, overlap in %, samples or seconds.
  - (b) Statistical functions: min, max, range, extremum, sum, mean, variance, skewness, kurtosis, standard deviation, rms, crest factor, mean absolute deviation, extreme deviation, Markov regression, 10th-25th-75th and 90th-percentile, median, integration.
- 11. Spectral Processing:
  - (a) Any spectral function on complete/segments multichannel time histories, with logging of processing history.
  - (b) Spectral Functions: DFT, FFT, Maximum Entropy Method (MEM), autopower, multiple input multiple output (MIMO) crosspower, MIMO FRF, impulse response, MIMO coherence, principal component analysis

## Data Acquisition and Analysis System Technical Specification

- (PCA), autocorrelation (time & frequency domain), crosscorrelation (time & frequency domain), 3D spectral map, 3D MEM map.
  - (c) Processing parameters: any block size (no limit on size), format (linear, power or power spectral density - PSD), scale (peak, RMS), window (Uniform, Hanning, Hamming, Kaiser-Bessel, flattop), weighting (A, B, C, D)
  - (d) Optional Time Variant Frequency Analysis (Wavelets, Wigner-Ville)
12. Digital Filtering:
- (a) FIR: Window, Multi-window, Remez
  - (b) IIR: Bessel, Butterworth, Chebyshev, Inverse Chebyshev, Cauer, Inverse design.
  - (c) Arbitrary FRF
  - (d) Graphical definition of cut-off frequencies through single and double cursors.
  - (e) Direct graphical interpretation of filter frequency response function FRF, phase and group delay.
  - (f) Capability of grouping different filters in one filter with user definable name.
  - (g) Multiple filters (software regulates ideal cascading) can be set for filtering multiple channels at the same time.
  - (h) Filter modes: direct, zero-phase.
  - (i) User-designed filters can be saved in user-definable defaults for later use.
  - (j) Octave Filtering: ANSI-IEC compliant 1 and 1/3 Octave filtering (multiple bands in one run). - Harmonic Tracking (Kalman fixed frequency and order filtering)
13. Counting:
- (a) Range-pair, Extremum, Level crossing, mean, range, range-pairmean, range-pair-range
14. Customization:
- (a) A snap-shot function allows the user to define specific layouts and save specific processing parameters for a specific processing tasks. Multiple snap-shots can be saved under different names and recalled whenever required. The snap-shot function exists for : Digital Filtering, Frame Statistics and the main Time Data Processing layer.
  - (b) Configurable menubar and ICON toolbar: the user can configure the menu entries, as well as ICONS in the processing toolbar, which will start a specific command or a user program.
  - (c) A special mechanism (basename & context) allows the system to be configured for specific tasks. In this way user interface and processing options will depend on the type of task one will have to perform; eg. one can have a set-up for analyzing one type of test article, and a totally



## Data Acquisition and Analysis System Technical Specification

different one for a different type of test article with different defaults, options etc... .

- (d) Complete customization and application development capability including the ability to generate user-defined GUI's with different menus which include push buttons, radio buttons, input fields, progress indicators
- d. The DAAS Real Time Data Processing software must have the following expansion capabilities:
- 1. Data I/O
    - (a) Instrument recorder interfaces (optional): SONY PC200 Series, SONY SIR-1000, TEAC RD and RX Series, RACAL-HEIM DataRec Series, Audio DAT & Head Acoustics HDR-IV, OPTIM MEGADAC, Metrum RSR-512, RACAL Storeplex range, A480, RACAL HEIM
    - (b) File Translators (optional): MTS RPCIII™, nCode nSoft DAC™, HP SDF™.
  - 2. Trace Manipulation:
    - (a) Adaptive re-sampling from any reference domain to any reference domain and back again (e.g. resample using engine RPM to angle domain)
  - 3. Spectral Processing:
    - (a) Optional Time Variant Frequency Analysis (Wavelets, Wigner-Ville)
  - 4. Digital Filtering:
    - (a) Harmonic Tracking (Kalman fixed frequency and order filtering)
  - 5. Block Data Processing:
    - (a) In addition to the menu driven processing, the same and many more functions are available in command mode and user programming. These allow manipulation of time history traces, as well as results blocks (spectra, histograms, waterfall maps, etc...).
    - (b) Macro-based autosequences can be developed for automatic sequential processing.
- e. The DAAS software must provide Advanced Customization capability via Native Microsoft Windows automation support allowing connection between the host data acquisition software and external programs making it possible to customize, extend, automate or integrate user defined programs and features with host data acquisition software. External programs can control host data acquisition software or can be embedded within host data acquisition software.
- 1. The Advanced Customization capability must accommodate the following system usage scenarios:

## Data Acquisition and Analysis System Technical Specification

- (a) Directing Testing Acquisition- Workbooks can be driven from external programs, which is very useful for customization or automation.
- (b) Monitoring Testing System - Events and measurement values can be continuously monitored from within an external application thus allowing remote monitoring. Also, the event generated at the end of a measurement can be used to trigger another process, such as notifying the operator.
- (c) Analysis extensions – Applications can be extended with in-house algorithms that can take data directly from the acquisition system without having to export to an external file. Results can then easily be fed back to the acquisition analysis software for display, storage or further processing.
- (d) Integration with other software – Through Microsoft Windows automation, the acquisition software should be able to integrated with external programs, for instance a control system, where either of the two systems can act as the master or slave system. It is also possible to host ActiveX components inside the software user interface. In this way, control of external devices can be integrated very closely within the acquisition and analysis software, while still being a separate process.

### 4. Technical Data Requirements:

- a. All software provided must include installation CDs
- b. All necessary Technical manuals that describe operation, maintenance, troubleshooting, repair and calibration must be included
- c. The initial calibration will be performed by a calibration laboratory that is certified to be in compliance with ANSI/NCSL Z540-1-1994
- d. Certificates of calibration must be provided